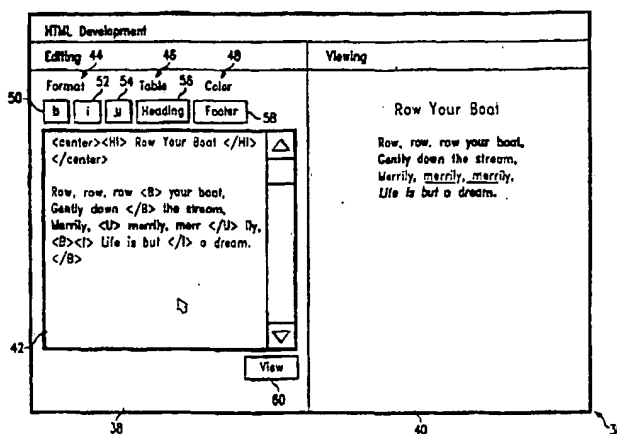




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>G06F 17/21</b>	<b>A1</b>	(11) International Publication Number: <b>WO 98/36365</b> (43) International Publication Date: 20 August 1998 (20.08.98)
(21) International Application Number: <b>PCT/US98/02677</b> (22) International Filing Date: <b>13 February 1998 (13.02.98)</b> (30) Priority Data: 08/799,318        13 February 1997 (13.02.97)    US (71) Applicant: <b>ELECTRONIC DATA SYSTEMS CORPORATION [US/US]; 5400 Legacy Drive, M/S H3-3A-05, Plano, TX 75024 (US).</b> (72) Inventor: <b>WALSH, Andrew, J.; 4544 Emerson Drive, Plano, TX 75093 (US).</b> (74) Agent: <b>GRIEBENOW, L., Joy; Electronic Data Systems Corporation, 5400 Legacy Drive, M/S H3-3A-05, Plano, TX 75024 (US).</b>	(81) Designated States: <b>AU, CA, JP, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</b>  <b>Published</b> <i>With international search report.          Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	

(54) Title: HYPER TEXT MARKUP LANGUAGE DEVELOPMENT TOOL



## (57) Abstract

A system (10) is provided for developing Hyper Text Markup Language (HTML) documents. The system (10) includes an interface (12) having an editing panel (38) and a viewing panel (40) simultaneously displayed. The editing panel (38) receives content information (14) and format information (16). The viewing panel (40) functions to display a web page (26). A processor (18, 24), coupled to the interface (12), generates or modifies an HTML file (20) in response to the content information (14) and format information (16). The processor (18, 24) further interprets the HTML file (20) in order to render the web page (26).

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon	KR	Republic of Korea	PL	Poland		
CN	China	KZ	Kazakhstan	PT	Portugal		
CU	Cuba	LC	Saint Lucia	RO	Romania		
CZ	Czech Republic	LI	Liechtenstein	RU	Russian Federation		
DE	Germany	LK	Sri Lanka	SD	Sudan		
DK	Denmark	LR	Liberia	SE	Sweden		
EE	Estonia			SG	Singapore		

BACKGROUND OF THE INVENTION

The Internet is an interconnection of computers located throughout the world. The Internet allows businesses, groups, and individuals to communicate and conduct business electronically. One application which is supported by the Internet is the World Wide Web (the "Web"). The Web comprises a number of computer servers ("servers") containing information which may be accessed by any of a number of users operating an appropriate computer ("client"), such as a personal computer, connected to the Internet. The information available on the Web is typically in the form of web pages. The term "web page" is used herein to mean any computer file capable of being provided through a computer network to a client, processed, and then displayed. An increasing popularity of the Web in recent years has spawned an entire industry for the development of web pages. That is, many people, generally known as web page designers, are now in the business of creating web pages for others who wish to establish a presence on the Web.

Web page designers use a descriptive language known as Hyper Text Markup Language (HTML) and scripting languages, such as JAVASCRIPT, to develop web pages that may be displayed at a client. HTML supports the formatting of documents, the addition of graphics to such documents, and hyperlinks to other documents. An HTML document comprises text which has been "marked up" with tags to specify the document's structure and formatting. These tags, which comprise instructions enclosed in angled brackets, are inserted just before, or before and after, the text affected. Software at a client interprets the tags and text of an HTML document to render or display a web page.

HYPER TEXT MARKUP LANGUAGE DEVELOPMENT TOOL

TECHNICAL FIELD OF THE INVENTION

This invention relates generally to the field of computers, and more particularly, to a Hyper Text Markup Language development tool.

A number of tools have been created in recent years to assist web page designers in developing HTML documents from which web pages can be rendered. These prior development tools, however, have suffered from numerous problems. For example, one prior development tool operated like a word-processor so that a web page designer only saw information as it would appear on a rendered web page--the HTML tags were invisible to the designer. For web page designers who were not very knowledgeable of HTML, this prior development tool was not suitable as a tutorial of HTML. In another prior HTML development tool, formatting tags could be generated by pressing certain buttons on a WINDOWS-type graphical user interface (GUI). When generated, however, these formatting tags would appear at the end of all the textual content of an HTML document. Because a user was required to copy and move the tags to their appropriate locations throughout the document, this prior tool was inconvenient.

SUMMARY OF THE INVENTION

In accordance with the present invention, the disadvantages and problems associated with prior HTML development tools have been substantially reduced or eliminated.

5 According to an embodiment of the present invention, a system is provided for developing Hyper Text Markup Language (HTML) documents. The system includes an interface having an editing panel and a viewing panel  
10 simultaneously displayed. The editing panel receives content information and format information. The viewing panel functions to display a web page. A processor, coupled to the interface, generates or modifies an HTML file in response to the content information and format  
15 information. The processor further interprets the HTML file in order to render the web page.

According to another embodiment of the present invention, a method is provided for developing HTML documents. In the method, an editing panel and a viewing  
20 panel are simultaneously displayed. Content information and format information are received at the editing panel. An HTML file is generated in response to the received content information and the format information. The generated HTML file is interpreted in order to render a  
25 web page corresponding to the generated HTML file. The rendered web page is displayed on the viewing panel.

Important technical advantages of the present invention include an HTML development tool comprising an editing panel and a viewing panel, which are  
30 simultaneously displayed to a user. The editing panel can be used to generate HTML tags throughout a textual document, these tags being visible to the user. The viewing panel shows the web page which may be rendered from the marked-up textual document. Because the marked-

up textual document and the rendered web page are simultaneously presented to the user, the present invention may function as a tutorial for users who are not extremely knowledgeable of HTML.

5 Another technical advantage of the present invention, includes providing a graphical user interface (GUI) have a plurality of buttons, lists boxes, and/or other interactive devices which can be used to generate HTML tags at appropriate locations throughout a textual  
10 document. Consequently, a user is required neither to manually type in such tags nor to copy and move tags to appropriate locations throughout the textual document. Accordingly, the present invention facilitates the development of an HTML document.

15 Other important technical advantages are readily apparent to one skilled in the art from the following figures, description, and claims.

BRIEF-DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention and for further features and advantages, reference is now made to the following description taken in conjunction with the accompanying drawings, in which:

5       FIGURE 1 illustrates an exemplary system for developing an HTML document, in accordance with an embodiment of the present invention;

10       FIGURE 2 illustrates an exemplary development screen generated by the system shown in FIGURE 1; and

      FIGURE 3 is a flowchart of a exemplary method for developing an HTML document, according to an embodiment of the present invention.



DETAILED DESCRIPTION OF THE INVENTION

The preferred embodiment of the present invention and its advantages are best understood by referring to FIGURES 1-3 of the drawings, like numerals used for like and corresponding parts of the various drawings.

Turning first to the nomenclature of the specification, the detailed description which follows is represented largely in terms of processes and symbolic representations of operations by conventional computer components, such as a central processing unit ("CPU") or processor associated with a general purpose computer system, memory storage devices for the processor, and connected pixel-oriented display devices. These operations include the manipulation of data bits by the processor and the maintenance of these bits within data structures resident in one or more of the memory storage devices. Such data structures impose a physical organization upon the collection of data bits stored within computer memory and represent specific electrical or magnetic elements. These symbolic representations are the means used by those skilled in the art of computer programming and computer construction to most effectively convey teachings and discoveries to others skilled in the art.

For the purposes of this discussion, a process, method, routine, or sub-routine is generally considered to be a sequence of computer-executed steps leading to a desired result. These steps generally require manipulations of physical quantities. Usually, although not necessarily, these quantities take the form of electrical, magnetic, or optical signals capable of being stored, transferred, combined, compared, or otherwise manipulated. It is conventional for those skilled in the art to refer to these signals as bits, values, elements,

5        symbols, characters, texts, terms, numbers, records, files, or the like. It should be kept in mind, however, that these and some other terms should be associated with appropriate physical quantities for computer operations, and that these terms are merely conventional labels applied to physical quantities that exist within and during operation of the computer.

10        It should also be understood that manipulations within the computer are often referred to in terms such as adding, comparing, moving, or the like, which are often associated with manual operations performed by a human operator. It must be understood that no involvement of the human operator may be necessary, or even desirable, in the present invention. The operations  
15        described herein are machine operations performed in conjunction with the human operator or user that interacts with the computer or computers.

20        In addition, it should be understood that the programs, processes, methods, and the like, described herein are but an example of one implementation of the present invention and are not related or limited to any particular computer, apparatus, or computer language. Rather, various types of general purpose computing machines or devices may be used with programs constructed  
25        in accordance with the teachings described herein. Similarly, it may prove advantageous to construct a specialized apparatus to perform the method steps described herein by way of dedicated computer systems with hardwired logic or programs stored in non-volatile  
30        memory, such as read only memory (ROM).

Referring now to the drawings, FIGURE 1 illustrates a system 10 for developing HTML documents, according to an embodiment of the present invention. Development system 10 includes an interface (I/F) 12 for inputting,

retrieving, and forwarding information. The functionality of interface 12 can be performed by one or more suitable input devices, such as a keypad, touch screen, input port, pointing device (e.g., mouse), and/or other device that can accept information, and one or more suitable output devices, such as a computer display, output port, speaker, or other device, for conveying information associated with the operation of development system 10, including digital data, visual information, or audio information.

Interface 12 receives content information 14, format information 16, and instructions from a user of development system 10. Content information 14 may comprise textual information (e.g., letters, numbers, words, alpha-numeric combinations, symbols, and the like) which a user desires to display on a web page for any of a number of reasons, such as to advertise a product or service, promote discussion with others, or provide information to people "surfing" the Internet.

Format information 16 comprises HTML markup information in the form of HTML tags. HTML tags are typically instructions enclosed in angled brackets which are inserted or added to textual information. These tags identify parts of a web page such as headers, footers, bulleted lists, body text, on-screen forms, fill-in text boxes, option buttons, radio buttons, drop-down list boxes, images to be displayed, hypertext links, colors, fonts, and various other formatting concepts. HTML tags may be included in the following four categories: (1) formatting tags which create paragraphs, tables, italics, bold face text, other format-related attributes; (2) structuring tags which establish the title, body, and headings of web pages as well as the sequence of or relationships between pages; (3) hyperlink tags

specifying which elements on the page are hyperlinks to other pages, and where the links go; and (4) meta-content tags which describe the overall contents and structure of the document for purposes of navigation, indexing, categorization, and citation.

The instruction received via interface 12 may be entered by a user to, for example, generate, modify, or remove content information 14 and format information 16.

As shown and described below in more detail with reference to FIGURE 2, interface 12 may comprise a development screen in which an editing panel and viewing panel are simultaneously presented to a user of development system 10. Content information 14 and format information 16 are entered by and visible to a user on the editing panel. Instructions can be received at the editing panel to generate, modify, or remove content and format information. A web page (which results from the rendering of an HTML document created from the combination of the content information 14 and format information 16, as described herein) can be displayed to a user on the viewing panel.

A generate module 18 is coupled to interface 12. The functionality of generate module 18 may be performed by a processor, such as a main-frame, file server, workstation, or other suitable data processing facility running appropriate software, such as, for example, NAVIGATOR 3.0. Generate module 18 functions to generate one or more HTML documents or files 20 in response to the content information 14, formatting information 16, and associated instructions received from a user via interface 12. Each HTML file 20 comprises textual information with HTML tags distributed throughout. Each HTML file 20 can be used, either alone or in combination

with other HTML files, to generate a web page which may be displayed at a suitable site, such as a client.

5 An HTML file memory 22 is coupled to generate module 18. HTML memory 22 may reside in a suitable storage medium, such a random access memory (RAM), read-only memory (ROM), disc, tape storage, or other suitable volatile and/or non-volatile data storage system. HTML file memory 22 can be a relational data base. HTML file memory 22 receives, stores, and forwards HTML files 20  
10 generated by generate module 18. These HTML files 20 can be retrieved from HTML file memory 22 as needed to generate corresponding web pages. Web pages can be embellished with graphics, and in some cases, with animation and sound.

15 A render module 24 is coupled to HTML file memory 22. The functionality of render module 24 can be performed by a processor, such a main-frame, file server, work station, or other suitable data processing facility running appropriate software, such as, for example, an  
20 HTML browser. This processor may be the same or separate from the processor which performs the functionality for generate module 18. Render module 24 is operable to retrieve the HTML files 20 generated by generate module 18 and stored within HTML file memory 22. For each HTML  
25 file 20, render module 24 functions to generate or render a corresponding web page by interpreting the textual content and formatting tags of the HTML file 20. The web pages rendered by module 24 may be in the form of displays 26.

30 In one embodiment, render module 24 may comprise a suitable web browser application for interpreting the HTML files 22. A web browser is a computer program that allows a client to exchange information with the Internet. Any of a variety of web browsers are

available, such as NETSCAPE NAVIGATOR, MICROSOFT EXPLORER, NCSA, MOSAIC, and others that allow users to conveniently access and navigate the Internet. The standard functions of a browser are to manage the connection between the client and the network, support the transfer of data therebetween, and interpret and display the data through a graphical user interface (GUI). To accomplish this, browsers may download and interpret information from servers. Because of the interaction with servers, render module 24 may be coupled to the Internet via a connection 25, which can be any suitable connection which supports communication, such as the transfer of data, between development system 10 and the Internet. For example, connection 25 may include any one or a combination of an Integrated Services Digital Network (ISDN) communications line, a hard-wire line, a fiber-optic line, a telephone link, or any other suitable means for communicating between system 10 and the Internet.

Render module 24 reads the tagged textual content of an HTML document to provide formatting for the same in a corresponding web page, which is presented to a user in the form of a display 26. The render module 24 formats the various parts of an HTML file 20 for on-screen display as directed by the HTML tags.

Render module 24 can be a forms-capable browser, meaning that it is able to interpret HTML code which provides forms, including fill-in text boxes, option buttons, drop-down list boxes, radio buttons, and the like. Render module 24 may also be a script-enabled browser, meaning that it is able to interpret HTML-formatted documents that include embedded script within the HTML code. Such embedded script is provided to a web browser at the client for enhanced processing at the

client. The embedded script may be provided in JAVASCRIPT format or any other scripting language format that is provided to a web browser at a client for enhanced processing.

5           Development system 10 may operate on one or more computers, shown generally as computer 28. Computer 28 maintains and executes the instructions to perform the receipt of content and format information, the generation and storage of HTML files 20, and the rendering of the  
10       HTML files 20 to produce corresponding web pages which are presented as displays 26. Computer 28 includes an input device 30, such as a keypad, touch screen, pointing device (e.g., mouse) or other device that can accept information. An output device 32 conveys information  
15       associated with the operation of development system 10, including digital data, visual information, or audio information. Both input device 30 and output device 32 may include fixed or removal storage media, such as  
20       magnetic computer disc, optical disc, CD-ROM, or other suitable media to both receive output from and provide input to development system 10. The input and output devices support the implementation of interface 12. One  
25       or more processors 34 and their associated memories execute instructions and manipulate information in accordance with the operation of development system 10 described herein. Processor 34 may support generate  
30       module 18 and render module 24. Computer 28 may also include or be coupled to any one or more peripheral devices, such as a modem, a printer, speaker, or the like, which provide or support additional functionality  
for development system 10. Computer 28 may be implemented using virtually any type of computer operating under the control of a suitable operating

system, such as MS-DOS, Macintosh OS, WINDOWS NT, WINDOWS 95, OS/2, UNIX, XENIX, and the like.

The present invention contemplates that computer 28 may function in some respects both as a client, which has  
5 a browser to receive and interpret HTML documents, and as a server, which stores HTML documents for retrieval via the Internet.

FIGURE 2 illustrates an exemplary development screen 36 generated by system 10 shown in FIGURE 1. Screen 36,  
10 which may be a graphical user interface, can be used to input, view, modify, or delete information relating to, or contained within, a particular HTML file 20.

As shown, development screen 36 comprises an editing panel 38 and a viewing panel 40 which are displayed  
15 simultaneously. Each of editing panel 38 and viewing panel 40 includes one or more fields for viewing, inputting, selecting, or modifying information. At least a portion of these fields can be implemented as buttons, list boxes, or any other suitable WINDOWS-type operatives  
20 for viewing or inputting information. For example, list boxes present a user with a selection list for inputting information. Other fields may require that information be input by keying or typing. Still other fields can be configured to default to predetermined default items.  
25 Other fields can be managed by development system 10.

Editing panel 38 may include a window 42 for input or receiving content information 14 and/or format  
information 16. As stated above, content information 14 may comprise textual information which a user desires to  
30 display on a web page. This content information may be in the form of letters, numbers, words, alpha-numeric combinations, symbols, and the like. In one embodiment, content information 14 may be entered into window 42 by typing such information into a keyboard. Format



information 16 may take the form of tags--i.e., instructions enclosed within angled brackets. As described herein, the tags can be added or inserted throughout the textual content utilizing any one or more of the other fields of editing panel 38.

In particular, a plurality of formatting fields may be provided on editing panel 38. Each of these formatting fields may comprise a pull-down menu, a list box, a button, or any other suitable windows-type input device for inputting or viewing information. Preferably, a user is able to interact with these devices using a suitable pointing device, such as a mouse, in order to generate or input format information 16, which appears in window 42 in the form of HTML tags. As shown, the formatting fields include a format field 44, a table field 46, a color field 48, a bold face field 50, an italics field 52, an underline field 54, a heading field 56, and a footer field 58. It should be understood that these fields are provided by way of example only. Thus, in other embodiments, any other suitable formatting fields can be provided in combination with, or instead of, any or all of the previously listed formatting fields on editing panel 38.

Format field 44 may comprise a pull-down menu which presents a user with a list of various format preferences for the text of the content information 14 in window 42. This includes font preferences (e.g., Courier, Roman, Times New Roman, Onyx, etc.), font size (e.g., 8 point, 10 point, 12 point, etc.), justifications (e.g., left, right, center), margins, typesetting, and the like. Table field 46 can be used to create a table for the content information 14 within window 42. Table field 46 may comprise a pull-down box specifying a number of preferences to generate such table. Color field 48 may

include a pull-down box specifying a number of color choices for the text within window 42. When any of the preferences of format field 44, table field 46, or color field 48 are selected, development system 10 will generate appropriate HTML tags within the text shown in window 42.

Bold face field 50 comprises a button which is used to create HTML tags for bold-facing text within window 42. Likewise, italics field 52 may comprise a button which is used to generate appropriate HTML tags for italicizing the text. Underline field 54 may include a button is used to generate HTML tags for underlining selected text in window 42. Heading field 56 and footer field 58 are provided to generate HTML tags for headings and footers, respectively, for the text shown within window 42.

As shown, a view field 60 may be also be provided on editing panel 38. View field 60 functions to initiate the creation or modification of an HTML file 20 comprising the content information 14 and format information 16 contained in window 42. View field 60 may also function to invoke a suitable browser application, such as that of render module 24, to interpret the HTML file 20 so that the corresponding web page may be rendered or displayed as a display 26. In an alternative embodiment, however, editing panel 38 may not include any view field 60 at all. Rather, the generation of an HTML file 20 and the invocation of a browser application to interpret the file may occur simultaneously with the receipt of content and/or format information.

Viewing panel 40 functions primarily to present a web page to a user in the form of a rendered display 26. This web page corresponds to the HTML file 20 created or modified in the operation of editing panel 38. In

particular, after an HTML file 20 has been created/modified utilizing editing panel 38, the HTML file is interpreted by the browser application to produce display 26 on viewing panel 40.

5 In operation, development screen 36 is presented to a user of development system 10. The user may interact with editing panel 38 to create and/or modify an HTML file 20. Content information 14 is entered into window 42, for example, by typing on a keyboard. Format  
10 information 16 is added to the displayed content information 14 using any of the formatting fields 44-58 provided on editing panel 42. Preferably, to accomplish this, the desired text is "highlighted" or selected by the user using a suitable pointing device (e.g., mouse).  
15 One or more of the formatting fields is then selected in order to generate appropriate HTML tags either just before, or before and after, the selected text. The present invention contemplates that a user can also insert HTML tags throughout the text in window 42 by  
20 typing the tags using a keyboard, such as the one by which the text is entered as described above. After a user has entered or modified the text and HTML tags in window 42, the user may select view field 60 in order to generate or update an associated HTML file 20. The  
25 selection of view field 60 also invokes the browser of render module 24 to interpret the HTML file 20 so that a corresponding web page is rendered or displayed in viewing panel 40 of development screen 36.

FIGURE 3 is a flow chart of an exemplary method 100  
30 for developing an HTML document, according to an embodiment of the present invention. In one embodiment, method 100 corresponds to the operation of development system 10 shown and described with reference to FIGURE 1. During the steps of method 100, a user may interact with

development system 10 via a suitable interface, such as exemplary development screen 36 shown in FIGURE 2. Method 100 is initiated in order to create a new HTML file 20 or modify a previously created HTML file 20.

5 Method 100 begins at step 102 where development system 10 is initialized. Each of editing panel 38 and viewing panel 40 may be initially presented to a user with a suitable message, such messages being simultaneously or consequentially displayed. In one  
10 embodiment, window 42 (of editing panel 38) and/or viewing panel 40 contains instructions for the operation of development system 10, such as, for example, the use of development screen 36. In an alternative embodiment, no initialization message is presented to the user. The  
15 user may choose to create a new HTML file 20 or, alternatively, to modify an existing HTML file 20. If the latter is chosen, generate module 18 retrieves the appropriate HTML file 20 from HTML file memory 22. After initialization, development system 10 is ready to receive  
20 information and instructions from the user.

Thus, at step 104, development system 10 receives content information 14 and format information. This information may be entered into editing panel 38 (of development screen 36) by the user via interface 12,  
25 which, in one embodiment, may comprise both a keyboard and a pointing device. Specifically, content information 14 is typed in to window 42 of editing panel 38 using the keyboard. Format information 16, in the form of HTML tags, may be inserted throughout content information 14,  
30 for example, by highlighting the desired content information 14 using the pointing device and then selecting from formatting fields 44-58.

At step 106, as content information 14 and format information 16 is being entered, or afterwards, generate

module 18 generates a new HTML file 20 or modifies an existing HTML file 20 in response. Such HTML file 20 is stored in HTML file memory 22, for example, as it is being created or modified. The HTML file 20 corresponds to a web page, which can be displayed in the form of a display 26.

At step 108, development system 10 determines whether view field 60 on editing panel 38 has been selected by a user. If view field 60 has been selected, render module 24 retrieves the HTML file 20 from HTML file memory 22. At step 110, render module 24 interprets the content information 14 and format information 16 within HTML file 20 in order to render a corresponding web page in the form of a display 26. This display 26 is presented to the user on viewing panel 40 of screen 36. Development system 10 then moves to step 112. On the other hand, if it is determined at step 108 that a user has not selected view field 60, then system 10 skips the step of rendering a display 26 and moves directly to step 112.

It should be understood that in an alternative embodiment editing panel 38 does not include a view field 60, in which case, method 100 does not include step 108. The rendering of a corresponding web page occurs simultaneously with the receipt of content and format information at step 104 and/or the generation of an HTML file 20 at step 106.

At step 112, it is determined whether the user has elected to end this session for developing an HTML file 20. If the user has not elected to end the session, development system 10 returns to step 104 where additional content and/or format information is received at interface 12. Otherwise, if it is determined that the user has elected to end, then method 100 ends.

5 Development system 10 may repeat steps 104-112, during which a user alternately (1) enters information on editing panel 38 to generate or modify the HTML file 20, and (2) views a display 26 for a corresponding web page on viewing panel 40. All HTML tags which are generated and inserted into the textual information are visible in window 42. Display 26 shows how the HTML tags support the formatting and layout of the textual information in the resultant web page.

10 From the above, it can be seen that the system and method of the present invention can be utilized as a development tool for developing HTML files 20 and resultant web pages. Furthermore, the system and method may serve as a tutorial for teaching users HTML markups.

15 Although the present invention and its advantages have been described in detail, it should be understood that various changes, substitutions, and alterations can be made therein without departing from the spirit and scope of the invention as defined by the appended claims.

WHAT IS CLAIMED IS:

1. A system for developing Hyper Text Markup Language (HTML) documents, the system comprising:  
an interface having an editing panel and a viewing  
5 panel simultaneously displayed, the editing panel operable to receive content information and format information, the viewing panel operable to display a web page; and  
a processor coupled to the interface, the processor  
10 operable to generate or modify an HTML file in response to the content information and format information, the processor further operable to interpret the HTML file in order to render the web page.
- 15 2. The system of Claim 1, wherein the processor comprises a browser application.
3. The system of Claim 1, further comprising a memory coupled to the processor and operable to store the  
20 HTML file.
4. The system of Claim 1, wherein the editing panel comprises a graphical user interface comprising:  
a window operable to receive the content  
25 information; and  
an interactive device operable to generate format information at selected locations throughout the content information.
- 30 5. The system of Claim 1, wherein the format information comprises at least one HTML tag.

6. The system of Claim 1, wherein the editing panel comprises an interactive device for generating an HTML tag.

5        7. The system of Claim 1, wherein the interface is operable to display instructions to a user on at least one of the editing panel or the viewing panel.



8. A system for developing Hyper Text Markup Language (HTML) documents, the system comprising:

an interface having an editing panel and a viewing panel simultaneously displayed, the editing panel comprising a graphical user interface operable to receive content information and format information, the viewing panel operable to display a web page; and

a processor coupled to the interface, the processor operable to generate or modify an HTML file in response to the content information and format information, the processor comprising a browser application operable to interpret the HTML file in order to render the web page on the viewing panel.

9. The system of Claim 8, wherein the graphical user interface comprises:

a window operable to receive the content information; and

an interactive device operable to generate format information at selected locations throughout the content information.

10. The system of Claim 8, further comprising a memory coupled to the processor and operable to store the HTML file.

11. The system of Claim 8, wherein the format information comprises at least one HTML tag.

12. The system of Claim 8, wherein the interface is operable to display instructions to a user on at least one of the editing panel or the viewing panel.

13. A method for developing Hyper Text Markup Language (HTML) documents, comprising the steps of:  
simultaneously displaying an editing panel and a viewing panel;

5 receiving content information and format information at the editing panel;

generating an HTML file in response to the content information and the format information;

10 interpreting the generated HTML file in order to render a web page corresponding to the HTML file; and displaying the rendered web page on the viewing panel.

14. The method of Claim 13, wherein the step of receiving content information and format information comprises the steps of:

displaying a graphical user interface comprising a window and an interactive device;

20 receiving content information at the window; and

generating format information at selected locations throughout the content information in response to actions received at the interactive device.

15. The method of Claim 13, further comprising the step of storing the HTML file in a memory.

16. The method of Claim 13, wherein the step of interpreting the generated HTML file comprises interpreting using a browser application.

30

17. The method of Claim 13, wherein the editing panel comprises an interactive device for generating an HTML tag.

25.

18. The method of Claim 13, further comprising the step of initializing the editing panel and the viewing panel.

5 19. The method of Claim 13, further comprising the step of displaying instructions to a user on at least one of the editing panel or the viewing panel.

1/2

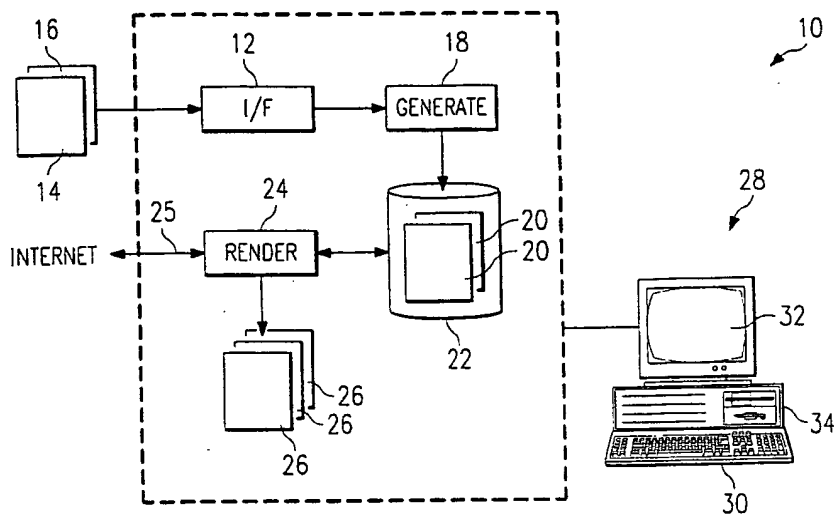


FIG. 1

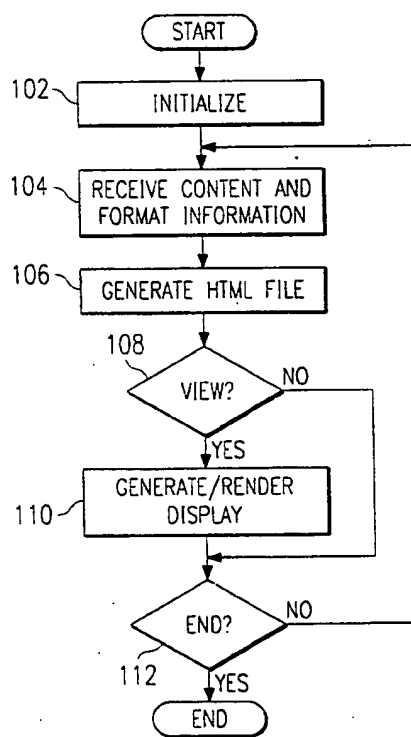


FIG. 3

2/2

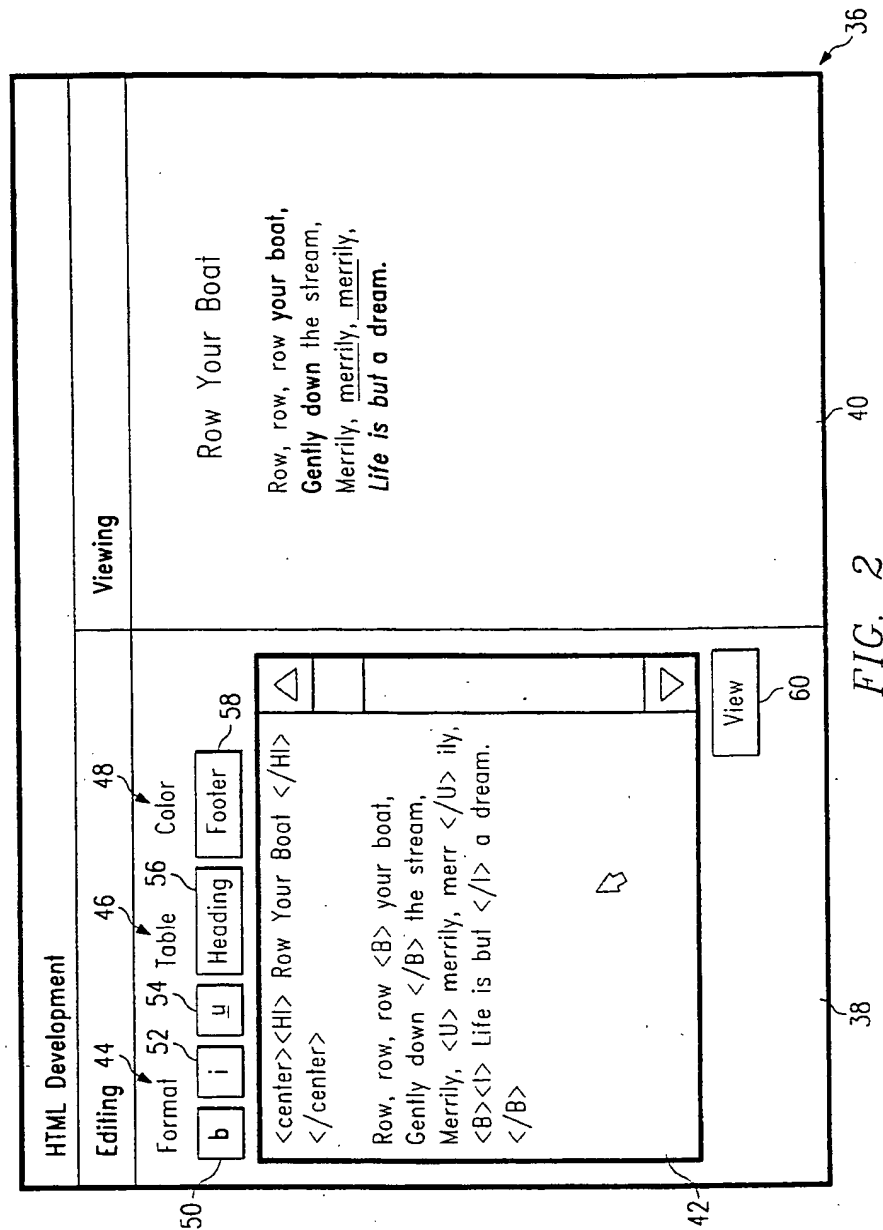


FIG. 2

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 98/02677

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 G06F17/21

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	QUINT V ET AL: "A structured authoring environment for the World-Wide Web" COMPUTER NETWORKS AND ISDN SYSTEMS, vol. 27, 1995, pages 831-840, XP000573398 see page 834, right-hand column, paragraph 3	1,3-7, 13-15, 17-19
Y	see page 835, right-hand column, paragraph 2 - page 836, left-hand column, paragraph 2; figure 1 --- -/--	2,8-12, 16

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

### Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

4 June 1998

Date of mailing of the international search report

18/06/1998

Name and mailing address of the ISA  
European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  
Fax: (+31-70) 340-3016

Authorized officer

Pottiez, M

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 98/02677

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GIORGIS T W: "8 tools for weaving your Web site" BYTE (INTERNATIONAL EDITION), MCGRAW-HILL, USA, vol. 22, no. 1, January 1997, ISSN 0360-5280, pages 116-120, XP002067087 see page 117, left-hand column, paragraph 2	2,8-12, 16
X	--- WEBER K: "Chapter 6, in which Pooh proposes improvements to Web authoring tools, having seen said tools for the Unix platform" COMPUTER NETWORKS AND ISDN SYSTEMS, vol. 27, no. 6, April 1995, pages 823-829, XP004013184 see page 824, right-hand column, paragraph 2	1
A	--- LEWITT J: "Web authoring made simple" INFORMATIONWEEK, 11 DEC. 1995, CMP PUBLICATIONS, USA, no. 557, ISSN 8750-6874, pages 84-86, 88, XP002067088 see page 85, left-hand column, paragraph 2 -----	2,8,16

1

**THIS PAGE BLANK (USPTO)**